

REMARKS

Applicant, by the amendments presented above, has made a concerted effort to present claims which more clearly define over the prior art of record, and thus to place this case in condition for allowance. Currently, claims 1-29 and 32 are pending.

Claim Objections and Rejection Under 35 U.S.C. §112, second paragraph

Claim 10 has been amended so that it is now dependent solely on claim 8.

Reconsideration and allowance is requested.

Claim 15 has been amended to remove the incorrect full-stop. Claim 19 has been amended to remove the "or" and to change "the external temperature" to "the exterior temperature". Applicant notes that the Examiner indicated that claim 15 would be allowable when the objection and rejection are overcome. Reconsideration and allowance is requested.

Claim Rejections - 35 U.S.C. §§102(b) and 103

Claims 1, 2, 16-18, 31 and 32 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by United States Patent No. 5,558,084 to Daniell et al. and claims 3-7, 13, 14, 19-23 and 29 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over Daniell et al. Reconsideration of the rejections is requested.

Applicant addresses the Examiner's response to its arguments, in particular in relation to Daniell et al. The Examiner states that "it is well known that the higher the temperature the faster the gas flow would occur". Applicant submits that this is incorrect. Temperature and flow rate are independent variables. Perhaps, the Examiner means that the higher the temperature of a gas, the faster the individual atoms and molecules in the gas move. However, the speed of individual molecules in a gas is not related to the overall flow rate of

the gas in particular direction. In a breathing assistance apparatus, the temperature of the gas has no bearing on the flow rate of the gas. They are independent variables. It is possible to produce gas at high temperature and low flow rate, or high temperature and a high flow rate. Equally, it is possible to produce low temperature gas at high flow rates or at low rates. There is no direct or causal link between temperature and gas flow rate. Measuring the temperature of the gas on its own gives no indication of what the flow rate is. Accordingly, temperature cannot be said to be a parameter relating to flow rate, as required by claim 1.

The Examiner asserts that his statement is supported by the remark on page 19, line 19 of Applicant's last response that "the greater the amount of power required to raise the gases to given temperature, the greater the flow rate of gases through the humidifier", but Applicant submits that this statement does not support the Examiner's assertion. Temperature is a measure of the thermal energy of a system. An increase in temperature of the gas is an increase in the thermal energy of the gas. It takes a set amount of energy to raise a given amount of gas by a given temperature. Power is a measure of energy transfer per unit time. If gas is flowing more quickly past the heater element, a greater amount of gas flows past the heater element per unit time. Therefore, a higher flow rate means that the heater has to supply more energy per second to raise the temperature of the gas by given amount. That means that if there is an increase in gas flow, there must be more power supplied to the heater to maintain a given output temperature. This does not mean that gas at a higher temperature flows more quickly. The gas flow is not due to convection, it is typically driven by a fan, and the temperature of the gas has no bearing on the flow rate.

Daniell et al. discloses a system in which ambient temperature is used to control the output temperature of gas from a humidifier. The output temperature of the gas is set to have a constant difference from the ambient temperature. However, Daniell et al. does not disclose

determining a parameter relating to the flow rate of gas through the apparatus, and using that parameter to determine the required power to the humidifier. Daniell et al. requires temperature sensors to control the power to the humidifier. The point of the presently claimed invention is that temperature sensors are not required, as explained on page 7, lines 19-28.

The Examiner states that Daniell et al. shows evidence of continuous monitoring of the temperature sensors and control of heaters based on the sensed temperatures. However, that does not render the specific steps of claim 3-7, 13, 14, 19-23 and 29 obvious, as alleged by the Examiner. Claims 3 and 19 relate to monitoring a condition of the water heater until it reaches a predetermined condition e.g. a stable condition, before obtaining a measure of the flow rate, which is used to control the heater. Claims 5, 13 and 21 relate to monitoring changes in flow rate of the gas which are indicative of obstructions or blockages in the system. Daniell et al. discloses neither of these types of monitoring. At best, Daniell et al. discloses monitoring a difference between ambient temperature and the temperature of delivered gases to control heating. That is a completely different control process.

The point that Applicant made in their submission of May 19, 2005 is that, although Daniell et al. might disclose a monitoring temperature and controlling the heater based on the monitored temperature, the Examiner has not explained why that renders the specific steps claimed in claims 3-7, 13, 14, 19-23, and 29 obvious. Daniell et al. does not disclose the specific steps of these claims in any way at all. For example, claim 3 requires a variable indicative of a property of the water heater to be continuously monitored until the variable (or the parameter relating to flow rate) indicates that the water heater has reached a first condition (e.g. a stable condition). Daniell et al. does not disclose or suggest such a step. Applicant submits that claims 3-7, 13, 14, 19-23 and 29 are not obvious in view of Daniell et al. as the re

is nothing in Daniell et al. which relates to measuring the flow rate of gases, monitoring the condition of the water heater until it reaches a certain condition or of monitoring changes in flow rate of the gases.

Applicant maintains its arguments submitted on May 19, 2005, namely:

Independent claim 1 specifies "a controller or processor configured or programmed to: (a) determine a parameter relating to the flow rate of said gases through said apparatus . . . (c) supply as said input power to said humidifier a level of power substantially similar to said determined power input to said humidifier." Independent claim 13 specifies "a controller or processor including stored instructions to . . . (a) determine a parameter relating to the flow rate of said gases through said apparatus . . . (c) supply as said input power to said humidifier a level of power substantially similar to said determined power input to said humidifier". Independent claim 17 specifies "using an open loop controlled humidifier comprising the steps of: (a) determining a parameter relating to the flow rate of said gas through said humidifier . . . (c) supplying a level of power to said humidifier substantially similar to said determined power. Independent claim 32 specifies "using open loop control comprising . . . means for determining a parameter relating to the flow rate of said gas through said apparatus . . . means for supplying as said input power to said humidifier a level of power substantially similar to said determined power input to said humidifier."

Applicant submits that Daniell et al. does not disclose determining a parameter relating to the flow rate of gases through the apparatus as specified in the independent claims. Instead, Daniell et al. discloses determining the temperature of the gases. The temperature of the gases is not, on its own, a parameter related to the flow rate of gas through the apparatus. It is an essential feature of the invention claimed in the independent claims to use a measure of flow rate to control the power supplied to the humidifier, as this prevents dangerous

conditions occurring at low flow rates or zero flow rate. Therefore, because Daniell et al. does not disclose all of the limitations of the independent claims, Applicant submits that independent claims 1, 13, 17 and 32 are allowable. Reconsideration and allowance is requested.

Independent claims 16 and 31 require an indicator which indicates when the conduit heater is correctly connected and operable within predefined limits. Applicant submits that Daniell does not disclose this feature. The Examiner has equated both display 67 and alarm 62 of Daniell with the indicator claimed in claims 16 and 31. There is no disclosure in Daniell that display 67 indicates proper connection of the conduit heater; it is described as displaying temperature information. Alarm 62 is described as sounding upon sensing of undesirable circumstances or faults. There is, therefore, no way that alarm 62 would sound upon correct connection of the conduit heater. Therefore, neither display 67 or alarm 62 correspond with the indicator claimed in claims 16 and 31. Thus, independent claims 16 and 31 are not anticipated by Daniell. Reconsideration and allowance is requested.

Claims 8, 9, 12, 24 and 25 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over Daniell et al. in view of United States Patent No. 5,349,946 to McComb or United States Patent No. 5,031,612 to Clementi. Claims 8, 9 and 12 are dependent upon claim 1 which Applicant submits is in condition for allowance. Therefore, Applicant submits that claims 8, 9 and 12 are allowable. Claims 24 and 25 are dependent upon claim 17 which Applicant submits is in condition for allowance. Therefore, Applicant submits that claims 24 and 25 are allowable. Reconsideration and allowance of these claim is requested.

Claims 26-28 were rejected under 35 U.S.C. §103 as allegedly being unpatentable over Daniell et al. in view of McComb or Clementi, and further in view of United States Patent No. 5,546,933 to Rapoport et al. Claims 26-28 are dependent upon claim 17 which

Applicant submits is in condition for allowance. Therefore, Applicant submits that claims 26-28 are allowable. Reconsideration and allowance of these claim is requested.

A Petition for a One-Month Extension of Time is concurrently submitted herewith for extending the date for response up to and including December 8, 2005.

In view of the above, Applicant respectfully submits that the claims of the applicat on are allowable over the rejections of the Examiner. Should the Examiner have any question s regarding this Amendment, the Examiner is invited to contact one of the undersigned attorneys at (312) 704-1890.

Respectfully submitted,

Dated: December 5, 2005

By: 

Raiford A. Blackstone, Jr., Reg. No. 25,156
Linda L. Palomar, Reg. No. 37,903

TREXLER, BUSHNELI, GIANGIORGI
BLACKSTONE & MARR, LTD.
105 W. Adams Street
Suite 3600
Chicago, Illinois 60603
(312) 704-1890

884934